CLAIMS

What is claimed is

1. A workpiece holder for use with a lathe assembly comprising:

a base mountable on the carriage of a lathe, and

at least one flange attached to and extending upwardly from said base, said flange having a workpiece support opening therethrough, said opening being sized for free longitudinal movement of said workpiece through said opening while preventing lateral movement of said workpiece beyond a predetermined tolerance.

2. The workpiece holder of claim 1 further comprising a bushing assembly insertable into said workpiece support opening.

3. The workpiece holder of claim 2, wherein said bushing assembly is adapted to receive a workpiece of varying size.

4. The workpiece holder of claim 1 further comprising at least one bearing assembly insertable into said workpiece support opening.

5. The workpiece holder of claim 4 further comprising a bushing assembly insertable into said bearing assembly.

6. The workpiece holder of claim 5 wherein said bushing assembly is adapted to receive a workpiece of varying size.

7. The workpiece holder of claim 1 wherein said workpiece holder is traversable along at least a portion of the length of the workpiece.

8. The workpiece holder of claim 1 wherein said workpiece support opening is perpendicularly disposed within said at least one flange.

9. The workpiece holder of claim 8 wherein said housing comprises a second flange, wherein said channel is disposed between said at least one flange and said second flange.

10. The workpiece holder of claim 9 further comprising a passage perpendicularly formed in said second flange, said passage being substantially coaxial with said workpiece support opening.

11. The workpiece holder of claim 10 wherein said passage is capable of supporting a machined portion of the workpiece.

12. The workpiece holder of claim 9 further comprising a supporting sleeve securable to said second flange.

13. The workpiece holder of claim 1 further comprising a carriage included with the lathe assembly capable of moving along the length of the lathe assembly wherein said workpiece holder is securable to the carriage.

14. A method of machining a workpiece comprising:

(a) securing one end of a workpiece in a lathe assembly;

(b) supporting the unsecured portion of the workpiece within a workpiece holder at some discrete position along the length of the workpiece; and

(c) machining the workpiece with a cutting element that is connectable to the workpiece holder at a location proximate to the position where the workpiece is supported by said workpiece holder.

15. The method of claim 14 further comprising moving said workpiece holder and cutting element together in a direction that is substantially parallel to the axis of the workpiece.

16. The method of claim 15 further comprising moving said workpiece holder and cutting element together toward the secured end of the workpiece.

17. The method of claim 14 further comprising varying the location of the cutting element with respect to the axis of the workpiece during the machining process.